What is claimed is:

1. A receiver circuit, comprising:

a switch for blocking high voltages and for converting voltage signals to current signals, said switch comprising first and second signal terminals and a control terminal, said switch exhibiting an ON resistance when closed, said ON resistance controlled by an electric value at said control terminal;

a control circuit coupled to said switch for controlling said ON resistance of said switch in closed mode.

2. The receiver circuit of claim 1, wherein said first switch signal terminal is coupled to an output of a transducer and said second switch signal terminal is coupled to an input of a low-noise amplifier circuit.

3. The receiver circuit of claim 2, wherein said switch is a transmit/receive switch which is open during a transmission time interval and closed during a reception time interval, said switch passing only low-voltage pulses to the low-noise amplifier circuit.

4. The receiver circuit of claim 2, wherein the low-noise amplifier circuit requires an input resistance and a feedback resistance, and further wherein said ON resistance of said switch is the input resistance of said low-noise amplifier circuit.

5. The receiver circuit of claim 1, wherein said control circuit is a servo-loop circuit for generating an electric value at said control terminal of said switch when closed.

6. The receiver circuit of claim 5, wherein said servo-loop circuit comprises:

a current source having an input terminal and an output terminal;

a master switch, said master switch having an ON resistance and a control terminal responsive to an electrical value, said master switch is coupled to said output terminal of the current source, whereby a current I_{REF} is passed through said master switch and said electrical value at the control terminal of the master switch is capable of adjusting the voltage across said switch when closed to match a reference voltage V_{REF};

said switch utilizing said electrical value at said control terminal of said master switch.

7. The receiver circuit of claim 5, wherein said servo-loop circuit comprises a single switch with the electrical value at the controlling terminal adjustable during system idle time.

8. A receiver circuit, comprising:

a T/R switch for blocking high voltages and for converting voltage signals to current signals, said T/R switch comprising first and second signal terminals, said switch exhibiting an ON resistance when closed;

a low-noise amplifier circuit for amplifying low-voltage pulses while minimizing electronic noise, said amplifier circuit requiring an

input resistance and a feedback resistance, wherein said input resistance is said ON resistance of said T/R switch.

9. The receiver circuit of claim 8, wherein the T/R switch includes a control terminal and wherein the ON resistance is controlled by an electric value at the control terminal, the receiver circuit further comprising a control circuit coupled to said T/R switch for controlling said ON resistance of said switch in closed mode.

10. The receiver circuit of claim 9, wherein said control circuit is a servo-loop circuit for generating an electric value at said control terminal of said switch when closed.

11. The receiver circuit of claim 9, wherein said servo-loop circuit comprises:

a current source having an input terminal and an output terminal;

a master switch, said master switch having an ON resistance and a control terminal responsive to an electrical value, said master switch is coupled to said output terminal of the current source, whereby a current I_{REF} is passed through said master switch and said electrical value at the control terminal of the master switch is capable of adjusting the voltage across said switch when closed to match a reference voltage V_{REF};

said switch utilizing said electrical value at said control terminal of said master switch.

12. The receiver circuit of claim 9, wherein said servo-loop circuit comprises a single switch with the electrical value at the controlling terminal adjustable during system idle time.

13. A method of controlling voltage pulses, the method comprising the steps of:

providing a receiver circuit having a Transmit/Receive switch and a control circuit, said switch comprising first and second signal terminals and a control terminal and exhibiting an ON resistance when closed, said ON resistance controlled by an electric value at said control terminal;

receiving voltage pulses at the first signal terminal;

blocking high voltages applied to a transducer and passing only low-voltage pulses through said switch;

converting said low-voltage signals to current signals using said switch; and

controlling said ON resistance of said switch when closed using said control circuit.

14. The method of claim 13, further comprising the steps of coupling said first switch signal terminal of said switch to an output of a transducer and coupling said second switch signal terminal of said switch to an input of a low-noise amplifier circuit.

15. The method of claim 14, wherein said switch provided by the providing step is a transmit/receive switch which is open during a

transmission time interval and closed during a reception time interval, said switch passing only the low-voltage pulses.

16. The method of claim 14, wherein the low-noise amplifier requires an input resistance; and further wherein said ON resistance exhibited by said switch in the providing step is the input resistance of said low-noise amplifier.

17. The method of claim 13, wherein said control circuit provided by the providing step is a servo-loop circuit for generating the electrical value at the control terminal of said switch when closed.

18. The method of claim 17, wherein said servo-loop circuit provided by the providing step comprises:

a current source having an input terminal and an output terminal;

a master T/R switch, said switch having an ON resistance and a control terminal responsive to an electrical value, said master T/R switch is coupled to said output of the current source, whereby a current I_{REF} is passed through said master switch and said electrical value at the control terminal is capable of adjusting the voltage across said switch to match a reference voltage V_{REF};

said switch utilizing said electrical value at control terminal of said master switch.

19. The method of claim 18, further comprising the step of providing a servo-loop circuit comprising a single T/R switch with the electrical value at the control terminal adjustable during system idle time.